

Treatment Options for Bone Metastases

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Short Communication

In many cases of bone metastases, the cancer has progressed to the point where multiple bone sites are affected. As a result, treatment is often focused on treating pain and weak bone symptoms and is not intended as a cure. The most common treatment options for MBD include radiation, surgery, and medications to control pain and prevent further spread of the disease [1]. Recommendation given by doctors to perform surgery to stabilize weak or fractured bones.

Nonsurgical Treatment

Radiation

Radiation is very effective and is one of the most common treatments used to treat the symptoms of incurable MBD patients. By killing cancer cells, radiation can reduce pain, prevent tumor growth, and prevent fractures. Radiation can also be used to control postoperative cancer to repair broken bone. Studies show that post-surgery radiation improves patient function and reduces the need for additional surgery. However, when a fracture occurs, surgery is usually done before radiation therapy [2]. MBD is a systemic (systemic) problem and radiation therapy is unlikely to cure. Prior to treatment, doctors and patients need to clarify the goals of radiation therapy, whether it is to relieve symptoms and pain or to completely eliminate the affected bone disease. Therefore, physicians need to weigh the potential benefits and risks of radiation in each patient.

Different cancers respond differently to radiation. Several types of radiation therapy are available:-

1. **Local field radiation:** Local radiation is the most common type of radiation used to treat MBD. In this procedure, the radiation is directed to the tissue immediately next to the metastatic tumor. Depending on the number of areas affected by the disease, the entire bone segment or multiple bones can be targeted for local irradiation. The main goal of radiation therapy is to relieve pain with minimal side effects. Local irradiation usually results in complete pain relief in 50-60% of cases and partial pain relief in more than 80% of cases. How much the MBD responds to radiation depends on many factors, including the type of cancer (for example, breast cancer usually responds very well to radiation, but kidney cancer does not) and the location of the tumor. Varies pain usually subsides in the first 1-2 weeks, but maximum relief can take months [3]. Therefore, your doctor will prescribe you painkillers to take during radiation therapy.

2. **Hemibody irradiation:** This radiation therapy is often used in patients with a wide range of metastatic diseases. Instead of targeting specific bones, half-body radiation targets a larger area of the upper, middle, or lower body. Most patients with metastatic cancer have multiple tumors. Half-body radiation is used to supplement local radiation and can slow the progression of common illnesses. It is used less frequently than local irradiation.

3. **Radioisotope therapy:** As an alternative to hemibody irradiation, radioisotope therapy involves injecting a radiopharmaceutical (radiopharmaceutical) intravenously. The area of metastatic bone disease absorbs radiopharmaceuticals, which kill

tumor cells. Compared to hemibody irradiation, radioisotope therapy is easier to administer to the patient and easier for the patient to tolerate.

Medication Treatment

Medication treatment options for patients with MBD include:

1. **Chemotherapy:** This treatment combines various drugs to destroy cancer cells. Because these drugs affect the entire system, healthy cells such as white blood cells and platelets can also be damaged. Chemotherapy is given periodically with a rest period to restore blood cell count.

2. **Endocrine therapy:** This medication, also known as hormone therapy, is used for cancers that are affected by hormones. Hormones are chemicals produced by the glands in the body. In certain types of cancer, hormones can help the cancer cells grow and spread, or they can destroy the cancer cells and stop them from growing [4]. Treatment includes elevated hormone levels or blocking hormone production. It is very common to receive endocrine therapy for breast and prostate cancer.

3. **Bisphosphonates:** This medication, also known as hormone therapy, is used for cancers that are affected by hormones. Hormones are chemicals produced by the glands in the body. In certain types of cancer, hormones can help the cancer cells grow and spread, or they can destroy the cancer cells and stop them from growing. Treatment includes elevated hormone levels or blocking hormone production. It is very common to receive endocrine therapy for breast and prostate cancer.

Surgical Treatment

MBD surgery is used to treat or prevent fractures. The goal is to relieve pain, reduce the need for painkillers, restore skeletal strength, and regain the ability to perform daily activities. Broken or weakened bones should be carefully fixed and supported until they are strong enough to support their weight. During surgery, fixing devices such as wires, plates, rods, pins, nails and screws can be used to remove the tumor and stabilize the bone [5]. Bone cement is placed in the defect caused by the tumor and increases its strength. Research shows that patients who have surgery to prevent a break do much better than those who require surgery after a break occurs [6].

- They have shorter hospitalizations.

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- They are more likely to be discharged to home (vs. being discharged to a skilled nursing or inpatient rehabilitation facility).
- They return more quickly to previous activities.
- They have improved survival and fewer surgical complications.
- Surgery to reinforce fragile bones also allows oncologists and surgeons to coordinate surgical management and systemic therapy.

Conclusion

Advances in surgical techniques, radiation therapy, and medical therapy have significantly improved the quality of life for people suffering from cancer that has spread from its origin to the skeleton. Treatment options for MBD depend on how far the cancer has spread, which bones are affected, and the severity of the bone damage.

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Conflict of Interest

None

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